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NATURAL HERITAGE NEWS

The Newsletter of the Natural Heritage & Endangered Species Program

Inventorying and Protecting the Biological Diversity of the Commonwealth Since 1978

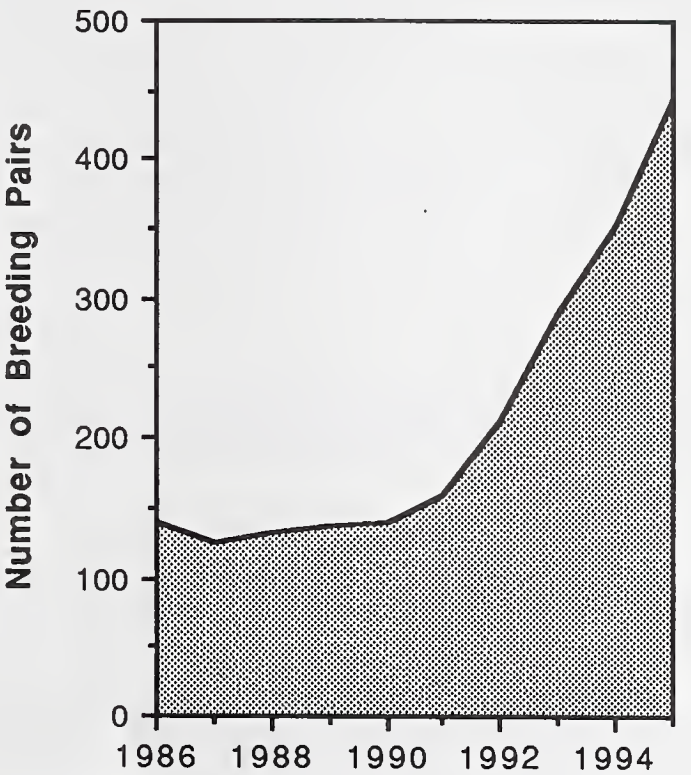
VOLUME 5, NUMBER 1 WINTER 1996

PIPING PLOVERS CONTINUE DRAMATIC RECOVERY

Intensive management efforts by shorebird biologists and beach managers throughout coastal Massachusetts were rewarded in 1995 as the state's breeding population of Piping Plovers continued to increase. Preliminary results from this summer's census indicate that about 445 breeding pairs were present in Massachusetts during summer 1995, an increase of about 26% over the 1994 count of 352 pairs. Numbers increased in every region of the state except the Elizabeth Islands. Largest increases occurred on Martha's Vineyard, the North Shore, and portions of Cape Cod.

Less encouraging was the statewide average reproductive success in 1995, which declined to a 4-year low of 1.5 chicks fledged per pair. Although disap-

[cont. on next page]



Piping Plover Populations in Massachusetts

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FROM BARRENS TO BOGS: An Active Year of Land Acquisition

The Division of Fisheries & Wildlife (DFW) acquired a total of 4700 acres of land during the year ending in June 1995. Nine of these acquisitions, totaling 320 acres, were of particular interest to the Natural Heritage & Endangered Species Program because of their unique habitats and the diverse species they supported. These nine tracts - and many of the other acquisitions - were purchased with Open Space Bond funds administered by the Department of Fisheries, Wildlife & Environmental Law Enforcement.

Two acquisitions enlarged the DFW's 104 acre Pitch Pine Barrens property in Mashpee. Fifty-six acre and 26 acre acquisitions helped expand the size and round out the combined holdings of the town conservation commission and the DFW to almost 400 acres. In addition to extensive **Pitch Pine/Scrub Oak barrens**, the area is interspersed with a number of **Atlantic White Cedar swamps**.

Two **kettle-hole bogs** in the north-central part of the state were protected by the DFW. In June, the agency acquired the 31 acre Quag Pond bog in Gardner and the 55 acre Hauk Swamp in Dunstable. These both contain floating mats of peat with *Sphagnum* moss, leatherleaf, pitcher plants and other plants characteristic of acidic bog environments, and are ringed by black spruce and larch trees.

Long desired for conservation, the 5 acre Eagle Island in the Merrimack River in Salisbury was finally acquired after nearly three decades of interest. As its

[cont. on page 5]

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Approved by: Philmore Anderson, State Purchasing Agent

Massachusetts Division of Fisheries and Wildlife
Route 135
Westborough, MA 01581

[Plover Recovery, cont. from p. 1]

pointing, this level of productivity should be sufficient to allow the population to continue to increase toward recovery. Lower reproductive success was partly attributed to increased predation, especially by red foxes. Of particular concern were several sites where "smart" foxes seemed to key-in on wire predator exclosures placed around plover nests and depredated eggs or caused adults to abandon nests. We will be working with other biologists and beach managers this winter to develop more effective strategies for reducing predation in 1996.

In light of the Piping Plover's continuing increase in Massachusetts, the Division of Fisheries and Wildlife is applying to the U.S. Fish and Wildlife Service for a federal "Section 10" permit to allow greater flexibility when managing recreational activities to protect plovers and their habitats. Provisions for such a permit are contained in Section 10 of the U.S. Endangered Species Act. Such a permit could allow increased management flexibility at some beaches where plover numbers are increasing and reproductive success has been high, and where management programs are in place that adequately protect plovers and their habitat. If a Section 10 permit is issued to the Division, examples of increased management flexibility might include new, experimental options for managing off-road vehicles, as well as reduced buffer areas around plover nests that occur near pedestrian access points on heavily used recreational beaches. We are confident that a Section 10 permit will result in new management options without jeopardizing on-going trends in the plover recovery and the increased protection of beach and dune ecosystems that has resulted from plover conservation efforts.

-Scott Melvin-

More Species Success Stories...

Bald Eagle

1995 has proven to be the most successful breeding season for Bald Eagles in the Commonwealth since the first re-nesting was documented in 1989. Of nine known territorial pairs, eight were documented as actively nesting (with eggs) and seven pairs were successful producing a total of 14 wild chicks. An additional 3 captively propagated chicks were fostered into wild nests. These young were provided by the Philadelphia Zoo and by the Massachusetts Bird of Prey Facility in Conway. Two of these three foster chicks are believed to have survived to fledge bringing the total 1995 chick production figure to 16.

Highlights during the nesting season included the discovery of two 3 chick nests. These were the first two instances of naturally occuring triplets in Massachusetts.

Reclassification of the Bald Eagle from "Endangered" to "Threatened" status became official in July under the federal End. Species Act. Reclassification shows that progress has been made nationally with the Bald Eagle population to the point that it is no longer facing extinction. The eagle is still protected to the full extent of the federal End. Species Act and still receives further protection under the Commonwealth's Wetlands and Endangered Species Acts. (See also Winter Eagle Count on page 8.)

Peregrine Falcon

The pair of Peregrine Falcons nesting on the Customs House tower in Boston produced two chicks in 1995. One of the youngsters, a male, became weak and grounded and was rehabilitated at Tufts Wildlife Clinic and Mass. Bird of Prey Facility in Conway.

The Springfield pair of Peregrines fledged three young. One of the fledglings was subsequently killed as the result of striking a building in the city.

A prospecting pair of Peregrines was observed near the John Hancock/Christian Science/Prudential Center towers in Boston. In response to this show of territoriality, a nesting tray has been installed on the Christian Science Building. There is optimism concerning the chance of this pair returning and nesting in 1996.

An unpaired male Peregrine was noted in the spring of 1995 apparently looking for a nest site on the bridge spanning the Taunton River at Battleship Cove in Fall River. This site will be monitored for activity in the spring of 1996.

Reports of eagle/osprey/peregrine activity are welcomed by the Division of Fisheries and Wildlife. Reports of suspected nesting activity, particularly during the months of March through May, are especially valuable.

Common Loon

Fourteen likely territorial pairs were monitored at 5 water bodies in central and west central Massachusetts. Three new sites were recorded as new territory and nesting occured on one of those and one chick was produced. An additional 2 formerly occupied territories were monitored; however, no loons were observed at these sites. Six nesting attempts were confirmed and a total of 7 loon chicks produced in 1995.

-Bill Davis-

For additional species updates see page 6.

Update on Vernal Pool Certification

Vernal pool certification has been undergoing an important evolution this past year. In June we resumed certification of vernal pool habitat under the 1988 "Guidelines for Certification of Vernal Pool Habitat". You may have also heard that we have undertaken an evaluation seeking to define criteria which would indicate a vernal pool of greater ecological value.

In March, we placed a temporary moratorium on certifying vernal pools that lacked rare species. This moratorium grew out of our practical need to prioritize vernal pool certification efforts in the face of serious financial constraints. This action raised the concerns of the Department of Environmental Protection (DEP), Massachusetts Association of Conservation Commissions, Massachusetts Audubon Society and others interested in the conservation of vernal pools. After a number of meetings, a multi-pronged approach to help resolve the problems was established. Help came in many forms; from DEP designating staff people in each DEP region as the regional contact (see box on page5) for vernal pool issues, to the Massachusetts Audubon Society finding qualified volunteers to help us process certifications. In addition, we solicited and received a $66,000 U.S. Environmental Protection Agency (EPA) Wetlands Protection State Development Grant to study vernal pools, which can be partially used towards vernal pool certification. We thank everyone involved in this process for their ideas, support, and recommendations.

During the process of evaluating our vernal pool certification priorities, we are also looking at vernal pool certification and protection in the context of all environmental regulations affecting vernal pool habitat. Besides the protection afforded vernal pool habitat under the Wetlands Protection Act (WPA), certified vernal pools are afforded protection under the state Water Quality Certification regulations (401 Program), the new state Title 5 regulations, and the new Forest Cutting Practices Act regulations. Please note that these other regulations provide protection only to "certified" vernal pools. Whereas, under the Wetlands Protection Act regulations, local conservation commissions have the discretionary authority to protect uncertified vernal pools if these pools are clearly shown to be significant to wildlife. The 1988 "Guidelines for Certification of Vernal Pool Habitat",

[cont. on page 5]

In the News: Salamanders Avert Landfill

On September 25, 1995, Commissioner David B. Struhs of the Department of Environmental Protection (DEP) rejected plans for a landfill in the town of Douglas, citing the occurrence of state Threatened Marbled Salamanders (Ambystoma opacum) as a major issue for rejecting the proposal. Commissioner Struh's other major concern was the question of **need** for the facility's capacity. DEP determined that the project as currently proposed did not meet the criteria of the Massachusetts Solid Waste Facility Management Regulations (310 CMR 19.00). This decision was based on the expert testimony of the NHESP and interested individuals.

In the most recent rare wildlife study by landfill proponents, a total of 16 adult Marbled Salamanders were trapped on the proponents' property and up to 37 larval salamanders were observed in a nearby breeding pool. This site represents one of the best known recorded breeding pools for Marbled Salamander in Massachusetts. The salamanders where found moving from the breeding pool toward the proposed landfill footprint. The Spotted Turtle, also a state-listed species, was determined to occur near the proposed landfill footprint, while two other state-listed rare species of turtle, the Wood Turtle and Eastern Box Turtle were found to occur in the vicinity.

Finding that Marbled Salamanders inhabit the proposed landfill site, the DEP determined that a 640-foot upland buffer, as recommended by the NHESP, around the subject vernal pools would be the minimum required to protect half of this population and ensure its long-term viability. But DEP added that a buffer of 1000 feet would be more appropriate based on the documented greater travel distances for juveniles and adults. They also determined that a proposed "salamander wall" located an average of 250 feet from the known breeding pool and intended to redirect salamanders to other suitable habitat, would disrupt feeding and migratory activity as well as increase the animals' exposure to predation.

The decision to deny this landfill permit clearly demonstrates the Commonwealth's interest in protecting the state's biodiversity. But, why should we bother to save **this** salamander? Because the health and prosperity of the planet, and its human inhabitants, ultimately depends on it and all other plants, animals, and natural communities that represent the diversity of life on Earth. Although individual species possess distinct utilitarian and intrinsic value, they also play essential roles in maintaining the delicate balance in the ecological systems that provide us with food, water, and shelter.

Sandplain Gerardia Restoration Underway

In September, square meter plots at Waquoit Bay National Esturarine Research Reserve in Falmouth were pink with the blossoms of one of the state's rarest species, the Federally endangered Sandplain Gerardia, Agalinis acuta. The species is currently known from two small populations on Cape Cod and another on Martha's Vineyard and from ten other populations in eastern United States. Using a grant received from the U.S. Fish and Wildlife Service, State Botanist Paul Somers has been coordinating efforts to identify management techniques that can be used to successfully restore this annual species to suitable habitat within its historical range.

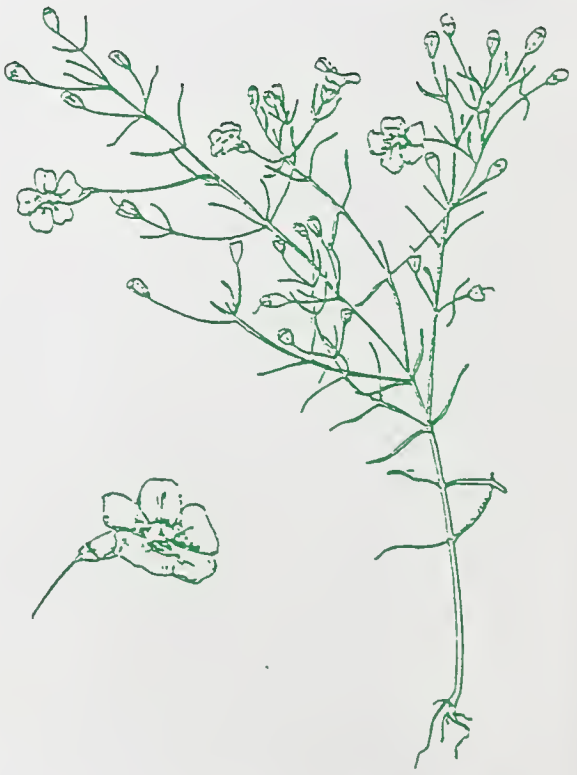
The goal of the current project is to determine what techniques will work to establish and maintain the species in sandplain grassland habitats where it formerly occurred. The sites where it has persisted are managed by a regular mowing regime that has continued for decades. While mowing probably could be used with some success in future restoration projects, the question remains as to whether other techniques such as burning, grazing, fertilizing, or soil scarification (raked with hand tools or discing with a tractor) would work better in terms of establishing large, new populations of Sandplain Gerardia, maintaining an ecosystem, and being simple and cost effective to do.

To do the research project, help was solicited from staff at DEM's Waquoit Bay National Estuarine Research Reserve, who agreed to let us use their land for the management studies. A team of botanists and volunteers assisted with planning and implementing experimental treatments at Waquoit Bay and at two sites on Nantucket. Bill Brumback and Kelly Slater from the New England Wild Flower Society were responsible for cleaning, measuring, and sowing the Agalinis seeds. Dr. Peter Dunwiddie and Carol Moffitt of the Massachusetts Audubon Society were responsible for establishing the Nantucket plots, gathering results and doing the final data analysis and report preparation. Julie Richburg of The Nature Conservancy assisted with planning, seed harvesting from the original sites, and applying the treatments.

Three treatment types were applied at Waquoit Bay in November 1994: soil scarification, burning, and manure fertilization/soil scarification. Approximately 1000 Agalinis seeds were sown into each plot immediately following the treatments. The seed utilized was taken from ripe capsules at one of the extant Cape Cod sites. About 5-7% of the capsules were harvested at this site. The experimental results in late summer of 1995 were lots of plants in all of the treatment plots. Of the approximately 21,000 seeds sown into 21 plots, 1159 mature plants were produced in the first growing season. All three treatment types yielded good results, and Peter Dunwiddie found no statistically significant difference in the average number of individuals produced among the treatments. While overall germination was only 5.5% , the treatment plots yielded slightly more plants than were counted at the parent colony in September 1995. Since the parent colony had over 90% of its 1994 seed crop and presumably a large bank of seed in the soil still viable from prior years, it appears that here the treatments had a dramatic effect on germination and/or survival of Agalinis acuta. An analyis of stem heights for the three treatments indicates statistically greater heights for plants in the burned plots and the scarified/fertilized plots than in those that were simply scarified.

Oddly, the results of similar experiments conducted by Dunwiddie at the two Nantucket sites yielded only a few plants. Of 50,000 seeds sown at two sites, only 10 plants were found (6 at one site and 4 at the other). All were found in small patches of bare, sandy soil. Whether the differences between the Nantucket and Waquoit results are related to site, weather, seed source, or something else, we do not know. These plots, along with the ones at Waquoit, will be monitored again in 1996 with the hope that an explanation will become more evident. Also, working with the same partner organizations, we are initiating studies to determine seed bank longevity in Agalinis acuta. Plans are underway also to test one or two other sites on Nantucket and to identify other potential areas for establishing populations. For the latter, we will be looking for places that have exemplary sandplain grassland habitat and where management and long-tern protection opportunities exist. What we learn from these management projects will hopefully be useful in safeguarding the future of this rare plant.

-Paul Somers-



Crowe, G.E. New England's Rare, Threatened and Endangered Plants. U.S. Department of the Interior. 1982.

[Land Acquisition, cont.. from p. 1]

name suggests, this **island** is once again utilized by roosting Bald Eagles during the winter months. It is near two other islands that the DFW owns in the Merrimack River.

A key **Coastal Plain pond** in Plymouth was safeguarded by the purchase of 11 acres on South Triangle Pond. Coastal Plain ponds are one of New England's most threatened natural community types and provide habitat for globally restricted plant and animal species. This parcel, which completes the land acquisition possible for this pond, is surrounded by hundreds of acres of conservation lands owned by the town and the Plymouth County Wildlands Trust.

Wetlands in Westfield that harbor a high diversity and an incredible abundance of amphibians and **vernal pool** invertebrates were further protected by the acquisition of two parcels totalling 52 acres that abut a previously acquired 10 acre parcel.

Lastly, on behalf of the Commonwealth, The Nature Conservancy was able to submit a sealed bid at an auction to acquire a key tract in Holyoke on very short notice (five days!) from the Federal Deposit Insurance Corporation (FDIC). After its bid was accepted, the 84 acre property was acquired by the Conservancy for approximately one half of its appraised value and subsequently was transferred to the DFW. A ridgetop parcel, it contains several important **vernal pools** and abuts 440 acres of town watershed lands.

Land acquisitions by Fisheries & Wildlife, like the 4700 acres purchased last fiscal year, are a very important means of protecting wildlife habitat in Massachusetts. Last year was a success with a rich array of habitats conserved. We are presently trying to accomplish another year of good land acquisition.

-Henry Woolsey-

[Vernal Pools, cont. from p. 3]

published by NHESP, should be used as a guide for identifying vernal pool habitat. Please note that alteration of vernal pool habitat can only be permitted if the alterations will have no adverse effects on wildlife habitat.

One significant weakness of current vernal pool regulatory protections is that even certified vernal pools receiving the greatest range of regulatory protection may be altered if adequate upland buffer areas surrounding these breeding spots are not protected as essential amphibian non-breeding habitat, or for their buffering capacity.

Based on our knowledge of vernal pool ecology, we have come to the conclusion that not all vernal pools are of equal biological value. As you would expect, determining the relative ecological value of a vernal pool is no easy assignment. Thanks to the two-year EPA grant, we have charged Matt Burne, vernal pool ecologist, with this task. He will be drawing upon the experiences of area biologists as well his own personal research in this area. We are trying to develop a set of criteria to distinguish vernal pools of greater ecological value. The appropriate use of the new criteria has yet to be determined.

We will keep you updated on these issues as they continue to evolve over the coming year.

- Patricia Huckery -

DEP VERNAL POOL CONTACTS

There are several DEP regional staff people who have been designated as regional contacts for vernal pool issues; their names are listed below. These staff people have been attending special NHESP vernal pool training sessions and will now act as liaisons between the NHESP and conservation commissions, wetland project applicants, and other parties with vernal pool questions. Theseindividuals will be able to advise people whether an area may be a vernal pool and if that area would be subject to protection under the Wetlands Protection Act. They will also be able to provide information on the vernal pool certification process. Please note that the NHESP will continue to handle the actual certification of vernal pool habitat.

Western	Karen Hirschberg	(413) 784-1100 x240
Central	Phil Nadeau	(508) 792-7650 x3728
	Dennis D'Dalto	(508) 792-7650 x3709
Northeast	Jim Sprague & Wayne Lozzi	(617) 727-5195 x6780
Southeast	Chris Ross	(508) 946-2813
	Dan Gilmore	(508) 946-2808

1996 State Box Score

Massachusetts List of Endangered, Threatened, and Special Concern Species

(as listed in 321 CMR 10.60, November 1995)

Taxonomic Group	Endangered	Threatened	Special Concern	Listed Total	Total Native Species	% of Native Species
MAMMALS (including 6 whales)	7 (7 Federal)	0	5	12	91	13%
BIRDS (breeding, exc. the Eskimo Curlew)	14 (3 Federal)	6 (2 Federal)	11	31	209*	15%
REPTILES (including 5 sea turtles)	8 (4 Federal)	5 (2 Federal)	3	16	30	53%
AMPHIBIANS	0	2	4	6	21	29%
FISH (inland species only)	4 (1 Federal)	2	3	9	39	23%
INVERTEBRATES (non-marine only)	24 (2 Federal)	17 (2 Federal)	58	99	**	**
PLANTS (vascular)	119 (2 Federal)	80 (1 Federal)	55	254	1,650	15%
TOTALS	176 (19 Federal)	112 (7 Federal)	139	427 (26 Federal)	2,040	16%

* Includes only native bird species known to nest in Massachusetts. Does not include migrants.

** The number of native invertebrate species is not known; they are therefore excluded from totals and percentages.

Federal: Species also listed by the U.S. Fish & Wildlife Service as Federally Endangered or Threatened as of Jan. 1996.

In November, the Massachusets Division of Fisheries and Wildlife added eight species to the Massachusetts List of Endangered, Threatened, and Special Concern Species. We have also made seven status changes of which six were to a more critical status.

VERTEBRATES

Two grassland bird species, Vesper Sparrow and Grasshopper Sparrow, were listed as Threatened due to habitat loss and fragmentation. Vesper Sparrow (*Pooecetes gramineus*) numbers have shown a decline in the past 100 years, with fewer than 100 pairs currently nesting in Mass.. The status of the Grasshopper Sparrow (*Ammodramus savannarum*) was changed from "SC" to "T." The population numbers are small and continue to decline. During the most recent inventory, only 300 territorial males were observed at 23 sites. Both the Grasshopper and Vesper Sparrows are regionally threatened in New England and have declining numbers throughout most of their North American range.

The Pied-billed Grebe (*Podilymbus podiceps*), Least Bittern (*Ixobrychus exilus*) and American Bittern (*Botaurus lentiginosus*), all previously listed, had their status changed to "E."

INVERTEBRATES

Six of the eight newly listed species are invertebrates. The Triangle Floater (*Alasmidonta undulata*) and Squawfoot (*Strophitus undulatus*) are two mussels that are now listed as "SC." Both species, historically common in New England, are now facing rangewide decline. Their habitats include ponds, lakes, and moving water with a clean, sandy substrate. Their decline is due to habitat loss and deteriorating reproductive biology. Agassiz's Clam Shrimp (*Eulimnadia agassizii*), a crustacean endemic to the region, is being listed as "E." There are one known current site and two historical sites, all occurring in Massachusetts. Agassiz's Clam Shrimp is found in ephemeral pools that are typically wet during early or late summer.

Other invertebrate species that were added or had their status changed are the following lepidopteran species:

Pine Barrens Lycia (*Lycia ypsilon*) - "T."
Unexpected Cycnia (*Cycnia inopinatus*) and Spiny Oakworm (*Anisota stigma*) - "SC."
Barrens Metarranthis (*Metarranthis apiciaria*) status changed from "SC" to "E."
Blueberry Sallow (*Apharetra purpurea*) - status changed from "T" to "SC."

PLANTS

New England Blazing Star (*Liatris scariosa* var. *novae-angliae*), a grassland species, was listed as "SC." Currently there are 35 known sites in 15 towns in Massachusetts. Most populations are small (less than 200 plants). Historically it is known to have occurred in 62 towns in the state. It is considered a candidate for possible listing under the federal Endangered Species Act.

Tiny Cow-lily's (*Nuphar lutea* ssp. *pumila*) status has changed from 'T" to "E." Only one extant record is known from the state. Historically this species was more widespread occurring in 12-13 towns. This species occurs in rivers, ponds, and lakes and is vulnerable to many of the same threats as are wetlands.

- Vicky Frey-

FUNDING UPDATE:
Contributions Decline, General Fund Support Critical

Annual voluntary contributions to the Natural Heritage & Endangered Species Fund on state income tax forms have declined 37% over the last five years! Contributions for tax year 1994 totaled $255,509 from 44,393 donors. The size of the average donation, $5.75, has continued to increase, however, this has not offset the large decline in the total number of donors, which has dropped off 41% percent over 5 years! The recent decline in contributions on so-called "income tax check-off" contribution lines has occurred on all four Massachusetts check-offs as well as on most similar check-offs in other states. The 1994 donations total is the lowest annual amount since the contribution line was added to the state's tax forms 12 years ago!

Thankfully, during the last two years, the Legislature has appropriated money from the state's General Fund to maintain the Natural Heritage & Endangered Species Program's operating budget. The Program's Fiscal Year 1996 budget of $622,096 relies on appropriations from three sources:

Fund	% of Total Program Budget
Natural Heritage & Endangered Species Fund (income tax form and direct contributions),	**33%**
Inland Fish & Game Fund (hunting & fishing license fees)	**16%**
General Fund	**51%**

Although the depiction of endangered species might suggest otherwise, the proceeds from the colorful **Whale license plates** appearing on many Massachusetts cars **do not directly benefit the conservation of the state's endangered species.**

Thank you to all who have donated on their income tax form or directly to the Program. Your support of our work helps us protect the state's endangered species and rare natural communities.

-Henry Woolsey-

HIGHWAYS, FLYWAYS, AND GREENWAYS:
Government Agencies Work Together to Identify Rare Species Habitats

NHESP is cooperating with several state and federal agencies to perform field inventories and identify rare species habitats.

The Massachusetts Highway Department and NHESP are working collaboratively on a G.I.S. mapping project. The project will identify rare species' habitats along the Mass. Highways road system and will aid Mass. Highways in determining where to implement best management practices for road drainage.

The US Air Force is sponsoring, through NHESP's Small Research Contracts program, field inventories of the Cape Cod Air Force Station in Bourne and the Sagamore Hill Observatory in Hamilton. The US Army Corps of Engineers is sponsoring field inventories on two of its properties, Conant Brook in Monson and a flood storage area in Brimfield, Holland, and Sturbridge.

The National Park Service has requested that the NHESP conduct an ecological assessment of a narrow corridor along the Miller's River between Athol and Orange. This corridor is being evaluated as a greenway: the assessment will focus on locating a river trail.

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NEWS NOTES

WE MOVED!

Since the last newsletter, The NHESP office moved from its Boston location to join the Division's main offices in Westborough.

The move reunites the Program with some of its field biologists who have been stationed in Westborough; it also provides more office space.

Our new address is printed below on this page. Our new telephone number is (508) 792-7270 x 200.

WINTER EAGLE COUNT

On January 12, 1996, NHESP staff and cooperators conducted the annual Midwinter Bald Eagle Survey for Massachusetts. Eagle watchers scanned the skies at assigned stations from the Berkshires to Cape Cod. This year's count of 60 bald eagles compares favorably with the 43 eagle average recorded since the survey began in 1979.

Most eagles, 32 of the 60, were sighted at Quabbin Reservoir. Other large bodies of water that attracted eagles were Wachusett Reservoir, Assawompsett Pond, Gloucester harbour and the Merrimack, Connecticut, and Housatonic Rivers.

NEWS NOTES

SURVEY SAYS...

In the last issue of our newsletter, we asked our readers to comment on the content and format of our newsletter. The number of responses was impressive. Your input helps us to keep you informed on what you want to know most....Thanks to all who responded!

STAFF NEWS

FOND FAREWELL

Diane Lauber, NHESP's Secretary/ Environmental Review Assistant, left the Program in December 1995. She is pursuing work in the field of intercultural relations in the American southwest.

NEW FACES

Collette Cadieux replaced Diane Lauber as administrative assistant in February 1996. **Joshua Delmonico** joined NHESP in November 1995 as G.I.S. Project Assistant. **Holly Jewkes** started as Environmental Review Assistant in that same month.

PUBLICATIONS

"WICKED BIG PUDDLES"

Vernal Pool identification and documentation, by the obligate species method, is made easy in a manual produced by a group of students at the Reading Memorial High School and published by the U.S. EPA. This guidebook is available for $10 (plus $3 S&H). Write to:

VPA-RMHS
62 Oakland Road
Reading, MA 01867

TWO YEAR ATLAS

Since 1988, NHESP has annually published an atlas showing maps of estimated habitats of selected rare species. This publication will now be produced every two years. The 1995-1996 Natural Heritage Atlas is available from NHESP at a cost of $45.00. This publication is designed for use by consultants, foresters, planners and administrators; the atlas can be used for general planning purposes and it provides information necessary for compliance with the MA Wetlands Protection Act and Forest Cutting Regulations. Write or call NHESP to order a copy.

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Henry Woolsey	Coordinator, Natural Heritage & Endangered Species Program
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Jeanne Livingston	Colonial Waterbird Specialist
Scott Melvin	Rare Species Zoologist
Patricia Huckery	Wetlands Environmental Reviewer
Paul Somers	State Botanist
Patricia Swain	Natural Community Ecologist

The Program also relies upon interns, volunteers, and work-study assistants for their crucial help:

Wendy Lily Hansen, Alexis Friedman, Karen Maguire, Jeffery Park, Dana Roth, and Robert Shoemaker.

Melissa Lowe Newsletter Editor

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